Thomisus decipiens Forbes, [1)]

a spider supposed to imitate the excrement of birds,

bij Edw. Jacobson (Fort de Kock).

With pl. 12.

My first acquaintance with the group of spiders, which by believers in the theory of mimicry is supposed to imitate the excrement of birds, dates from November 1911.

I lived then at Semarang in Java where I had my residence on the hills at an altitude of 60 metres above see-level. Every afternoon on my return from the office, I used to take a round in my garden to collect insects or to observe their habits. One day passing near a low palm-bush I noticed on one of the leaves an object, which I took for the excrement of a bird. A few days later coming along the same path the object was there still, exactly on the same spot as before. It struck me that the excrement was looking quite fresh, although a violent rain-shower had come down on the previous night. I therefore made a closer inspection and to my great astonishment found the object to be a spider. The likeness to a birds' excrement was so striking, that, in fact, I did not realize the truth till I touched it. I am not able to give the name of the species observed, as the specimen was sent by me together with a large collection of other spiders to Professor Kulczynski at Krakau, for identification. Since then I have not been able to trace the whereabouts if this gentleman, probably he became a victim of the war and my collection must have been lost.

In April 1917 I was on a collecting-trip at Sukamananti, a small village in the Ophir Districts. The place is situated

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[1)] *Thomisus decipiens* Forbes; Proc. Zool. Soc. London, 1883, p. 586. The Revd. O. P. Cambridge later called it: *Ornithoscatoïdes decipiens* (Forbes), Proc. Zool. Soc. London, 1884, p. 198 et seq. The type-specimens have been found in both Sumatra and Java.

in the alluvial plain at the foot of Mount Ophir at an altitude of 120 metres. When I was out shooting in the scrub-bush round the village I saw on a leaf an object which at first looked to me like the excrement of a bird. Its colour was brown with darker and lighter spots, with a glabrous appearance as if wet, and the wole was surrounded by a chalky white patch, looking like the dried up moisture, which often can be noticed surrounding birds' excrement.

After my former experience I was, however, not so easily deceived and, indeed, on further inspection the object turned out to be a spider, but of quite a different species from the one I had found 6 years before in Java. What I had taken for dried up moisture was a pure white web of very dense texture of about half an inch in diameter adhering closely to the surface of the leaf. This web, evidently, assures a firmer grip to the spider, sitting in the centre of the web with its legs drawn close to its body, as shown in fig. 1 (Plate 12). It did not stir, even when I detached the leaf and took it home. There I put it on the table before me, to watch its behaviour.

Very soon I noticed that the spider had caught a fly and after having sucked it dry, the body was discarded over the edge of the leaf. Three or four other flies were already swarming round and crawling over the surface of the leaf, and even over the body of the spider. When one of them came within reach the spider made a sally as quick as lightning and seized the fly with one of its fore-legs. When still busy with its first victim another fly coming near was caught with the other fore-leg and hugged to its body till the first one was sucked out.

As flies continued to swarm round the spider, I concluded that they were apparently attracted by something. On closer investigation I discovered that the spider gave off a very perceptible smell, which could be compared almost to the odor of urine, although it was not exactly the same.

For some time I watched the spider catching several more flies attracted by the smell.

The species from Sukamananti proved to be *Thomisus decipiens* FORBES. I owe the name to Mr. H. R. HOGG, who had the kindness to identify the specimen, which is now placed in the Leyden Museum of Natural History.

The specimen caught in Java was certainly of a different species, its colour being of a much darker brown. Also there was no trace of a web on the leaf. I do not know whether this spider too gave off some peculiar odor, the idea dit not occur to me then, but I am convinced now that this must have been the case and I feel sure, that all the species of spiders said to imitate birds' excrement are giving off some attractive smell, otherwise it would be quite uncomprehensible how they could manage to catch their prey. As they do not construct any webs in order to catch insects, and do not roam about to leap upon their victims, as other *Attidae* are wont to do, but remain nearly motionless on the same spot, often for a very prolonged period, they must possess some other means to attract their prey.

Entomologists should direct their attention to this point, to ascertain whether all the other members of the excrement-mimicing group of spiders, occurring in other parts of the globe, have the same gift of attracting flies by a peculiar odor.

A few months ago I heard that my friend Dr. W. DOCTERS VAN LEEUWEN, the Director of the Botanical Gardens at Buitenzorg (Java), being acquainted with my observation described above [1]), was able to confirm the fact from his own observation of a spider that he discovered in the grounds of the Botanical Gardens.

The experiences relating to this case are following below.

Fort de Kock, Oct. 1920. EDWARD JACOBSON.

The mimetic spider, a Thomisid, figured on plate 12, fig. 4, was found on the 30th of March 1920 by Dr. DOCTERS VAN LEEUWEN at the Botanical Gardens, Buitenzorg, resting on a leaf of a Liliacea. According to Mr. HOGG it must be a variety of *Thomisus decipiens* FORBES, from Sumatra.

The spider, in appearance, very much resembles excrements of birds and emits a rather pronounced smell of faeces; it sat upon a web closely stuck to the leaf.

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[1]) A preliminary account was given by me in the periodical „De Tropische Natuur” 1919, p. 18.

I kept this remarkable animal in a small jar for about six weeks; it did not move at all, remaining at the same spot, only walking around for a short while when disturbed.

Waiting for food the spider sometimes widely stretched out the first and second pair of legs, but when the jar was only slightly shaken it withdraw all its legs pressed closely to the body. I first fed it on common houseflies; the latter did not seem to be especially attracted by the odour of the spider, but if they happened to come in its vicinity they walked over the spider's body and would even suck at its abdomen, which seemed to be constantly wet. Practically at the same moment the flies were caught. Later on blowflies were given, which also were not attracted by the peculiar smell and did not suck at the spider's abdomen, but being close by were quickly caught and sucked out.

From April 15th till May 8th, having been on a collecting trip, I left my prisoner without food.

On my return, much to my astonishment, I found the spider still in a rather good condition, however not being too fat, I immediately put five houseflies in the jar, which were all sucked out at the same day, the next and following days the spider would not take any more food and unfortunately died on the 11th of May before enabling me to test the mimetic power of its faecal odour by placing real dungflies in the jar.

In FORBES' well known book „A Naturalist's Wanderings in the Eastern Archipelago" (1885), this *Ornithoscatoides* is mentioned twice by its discoverer; he collected it once in Java and once in Sumatra. In both instances he states positively that the spider was lying on its back on the leaf.

This was not the case with the specimen described above and which I observed in confinement, nor with the one Mr. JACOBSON found in Sumatra, as he informed me. Lately I collected this spider in great number on the island of Sebesi in Sunda Strait and also in the island of Krakatoa near by. All these spiders were sitting in the normal way with their under side towards the leaf. FORBES mentions the striking resemblance this spider bears towards bird's excrements, but he says nothing about the smell, wich evidently escaped his notice.

Buitenzorg, Dec. 1920. K. W. DAMMERMAN.

Note. Mr. DAMMERMAN states positively, that the flies were not attracted by the spider he observed. As he kept, however, his specimen in a small closed jar, this might have had some influence on the negative results of his observations. Perhaps the odour filled the whole jar and, therefore, could not be traced by the flies to the spider.

The specimen I observed at Sukamananti was put quite uncovered on a table in the veranda of the resthouse, where I stopped. The flies were decidedly attracted, as they came swarming round the spider. They were all common houseflies, and no blowflies or other species were observed by me to fall victims to the stratagem.

E. JACOBSON.

EXPLANATION OF PLATE 12.

Fig. 1. *Ornithoscatoides decipiens* (FORBES) from Sumatra on its web; nat. Size.
» 2. Cephalothorax, 5 ×.
» 3. » and diagram of eyes, 5 ×.
» 4. *Ornithoscatoides decipiens* (FORBES) var. from Java 2 ×.